

## AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method of detecting binding of a PAS (Per-ARNT-Sim) domain with a foreign core ligand of the PAS domain, wherein the PAS domain is predetermined, prefolded in its native state, and comprises a hydrophobic core that has no NMR-apparent a priori formed ligand cavity, the method comprising the steps of:

detecting a first NMR spectrum of the PAS domain in the presence of a foreign ligand;  
and

comparing the first NMR spectrum with a second NMR spectrum of the PAS domain in the absence of the ligand to infer the presence of the ligand specifically bound within the hydrophobic core of the PAS domain.

2. (Currently amended) A method according to claim 1, wherein the PAS domain is the PAS A domain of PAS kinase PAS-A.